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ABSTRACT

This study analyzed differences in perception of "critical incidents" in classroom teaching among inexperienced, experienced, and award-winning university professors. In past research, expert and novice differences in teaching have been attributed to differences in teacher knowledge, but the teachers were almost entirely at the elementary or secondary levels rather than the post-secondary where instructors have subject matter expertise rather than formal training in teaching. Analysis was based on a total of 102 questionnaire responses, all from full-time university instructors, fairly equally distributed among the three experience levels. Each summarized response was coded to characterize the professor's concerns and thinking associated with a memorable teaching incident, using the categories of: (1) knowledge, which could be information about students or about an instructional strategy; (2) processes, as pacing, or awareness of student comprehension levels; (3) goals, or desired outcomes; and (4) actions, or activities. The study found that, while categories used in the coding process could be hypothetically separated, it was frequently difficult in practice. There was much overlap between groups in the categories suggesting that the same category may have a different context in the different stages of a teaching career. Results have implications for faculty development activities. The Critical Incident Questionnaire is attached. (Contains 26 references.)(BF)

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Characterizing poor and exemplary teaching in higher education: Implications for faculty development.

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Objective

The objective of this study was to characterize the critical incidents of teaching held by relatively inexperienced university teachers (newly hired faculty), experienced faculty (more than ten years on the job), and award winning professors (university and national awards).

Theoretical Framework

In the past decade educational researchers have taken an ever increasing interest in the process of teaching and teacher thinking (e.g., Clark & Peterson, 1986; Leinhardt & Greeno, 1991). This research has lead to a number of generic principles of "good teaching" which include recommendations on how best to plan instruction, prepare handouts, stimulate student interest, evaluate learning, and so on (e.g., Clark, 1993; Gillett-Karam, 1992). In addition, teaching has been recognized as a complex and ill-defined task in which teachers perceive input from the immediate environment and utilize it to generate appropriate instructional actions.

Past research indicates differences in the thinking of teachers at various stages of their careers (e.g., Calderhead & Robson, 1991; Lienhardt & Smith, 1985). Experts perceive classroom events differently and use more information about learners than do novices (e.g., Calderhead, 1981; Carter, et. al., 1987; Carter, et. al., 1988; Copeland, et. al., 1994, Veenman, 1984). Expert and novice differences in teaching have been attributed to differences in teacher knowledge (e.g., Calderhead, 1988; Peterson & Comeaux, 1987; Shulman, 1986). Expert teachers have been found to have elaborate and rich cognitive schemas that provide a frame-work, inform, and facilitate action in complex classroom situations; overall experts know what to expect in classroom situations. They are able to monitor classroom situations (e.g., students), recognize problems, and make rapid decisions that meet their teaching goals (e.g., Carter et al, 1987;

Leinhardt & Smith, 1985). Indeed, many researchers have suggested that novices have less well elaborated schemas than do novices and lack metagcogntive and monitoring skills that typify expertise (e.g., Gage & Berliner; 1984; Gagné, 1985)

Unfortunately, the bulk of the research on teacher thinking has been conducted in elementary and high school settings; there is still a paucity of research addressing post-secondary teaching. There is little doubt that post-secondary instruction differs from lower levels in that instructors or professors are typically subject-matter-experts and do not have formal training in teaching (Ramsden, 1992); thus their knowledge base is markedly different than other teachers.

This paper focuses on differences in perception of "critical incidents" in classroom teaching among inexperienced, experienced, and award winning university professors'. It seeks to characterize professors concerns and their thinking associated with the memorable teaching incidents.

Method

This study represents a portion of the data collected for another study (Rahilly, in progress). Analysis was based on a total of 102 respondents who are full-time university instructors representing three groups. Group one (n = 33) had taught for less than ten years, group two (n = 29) had been teaching for ten years or more, and group three (n = 40) were faculty who had won teaching awards (national, provincial, or university). Participants were selected at random from published lists of award winning professors, membership directories of national organizations such as the Society for Teaching and Learning in Higher Education (STLHE), through requests posted on various national listservs concerned with the improvement of university teaching, as well as through the assistance of teaching centres at several universities across the continent.

Participants were contacted by email or regular mail and received a copy of a (lengthy) questionnaire. The questionnaire is based on a pilot study (Rahilly & Saroyan 1995) and on the critical incident technique outlined by Flanagan (1954) and Woolsey (1986). The use of the critical incident technique in conjunction with a questionnaire is a multi-method approach, which strengthens the account of teachers knowledge and beliefs Kagan (1990). Like all methods, this method is imperfect; it is retrospective in nature and does not capture thinking in action. However, the critical incident technique is rooted in a phenomenological approach and has been shown to yield data which identify the underlying assumptions related to thoughts, actions, and beliefs (Brookfield, 1990). In addition, this method is strongly based in an individuals' experience it emphasizes events that are meaningful to them and allows for the collection of both qualitative and quantitative data about classroom teaching and teaching thinking.

In this study faculty were asked to complete the Critical Incident Questionnaire (CIQ) which is basically a description of two classroom incidents; one in which they thought they had done an exemplary job of teaching, and one in which they felt they had done a poor job. The Critical Incident Questionnaire (CIQ) (see Appendix A) was developed based on Flanagan's (1954) original description of the critical incident technique in conjunction with Benner's (1984) description which emphasizes an incident as one in which the respondent felt their intervention made a difference (for the better or worse). The CIQ is composed of 12 questions (8 open ended) that ask respondents to describe the circumstances of the incident (e.g., when, where, kind of class, topic, etc.). A number of questions are based on the literature on problem solving (e.g., Hayes, 1989); thus respondents are asked to identify their teaching and learning goals, and to identify their actions, and to state what they "took" from the situation (i.e., did you learn anything). Lastly, the CIQ has one question which asks respondents what they

were feeling during the incident. This question was added based on results from the pilot study which indicated that emotion was a large element in determining if an incident was viewed as being positive or negative. The CIQ for the exemplary incident and poor incident are identical with the exception of one question. In the exemplary incident respondents are asked "what is it that you know that helped you in this incident", while in describing the poor incident they are asked "what is it you wish you had known that would have helped you in this incident?"

Respondents also completed another scale which takes a more quantitative approach to the same incidents. This data is not outlined in this study.

Responses to the CIQ were summarized based on the questions "what happened", "why do you think the incident is memorable", and "what do you wish you had known at this time". The other questions were also considered and responses were included if they contradicted the information outlined in the above mentioned questions. Each summarized response was then coded in terms of the underlying theme of the incident (which tended to be represented in the question "why do you think the incident is memorable" and then coded using the categories of teaching outlined in Rahilly and Saroyan 1995. These broad categories are: a) **knowledge**, which refers to what professors say they need "to know" and ranged from information about the learners to procedures professors might use in the classroom (e.g., knowledge of an instructional strategy such as cooperative learning); b) **processes** which refers to things that the professors said they need "to think" about in relation to their teaching (e.g., many professors said they need to monitor their pacing as well as to monitor their students' comprehension of material); c) **goals** were the desired outcomes of teaching that the professors felt were valuable and ranged from teaching critical thinking to preparing students for their next class; and d) **actions** were the activities that the professors referred to explicitly and these included class discussion, questioning, labs, and so on.

Results

Without a larger sample size it is difficult to find similar situations in the summaries of the critical incidents or memorable events of university faculty. If we temporarily (coded results appear in the next section) abandon all traditional notions of quantitative analysis without entering the rigorous world of qualitative analysis, there are some interesting observations. Basically, the results presented in this section involve reading over the summaries in the same way that one might look through a portfolio or a photo album and walking away and telling someone what you just saw. We recognize that in reporting this, we are distancing ourselves from each "photo" or "work of art" (i.e., teaching incident) and the analysis is based on the theory and knowledge base of the reader (i.e., the authors). To offer an analogy which emphasizes the strengths and limitations of this approach, one could look at the portfolio of a famous photographer like Ansel Adams and report that all the photo's are in black and white, or are mostly of trees and mountains, or one might report on the perspective or lighting. The possibilities are unlimited, and there is an argument that can be made to support each view of the same works. With all of these limitations in mind, here are some observations we offer for discussion and for feedback (see Table 1 and Table 2).

Recognizing the limitations of the method outlined above, each of the summarized teaching incidents was coded based on the themes of teaching (knowledge, processes, goals, actions). Table 3 represents the percentage (due to unequal n's in the groups) of the summaries falling into each category. As this paper represents only a portion of the data in the project, quantitative comparisons have, as of yet, not been carried out.

Poor Teaching	
Group	Observation
Inexperienced Professors	Situations in which their credibility and knowledge base are challenged or in which they reveal their limitations
Experienced Professors	Situations in which they have a plan or have taken a risk (e.g., to do something different) and it doesn't work.
Award Winning Professors	Situations when they become frustrated (e.g., enthusiasm not shared or unable to be enthusiastic) and are surprised at revelations about the learners (e.g., background preparation).

Table 1: situations reflecting poor teaching

Exemplary Teaching	
Inexperienced Professors	Situations when they plan, carry out their plan of teaching, and are pleased with the results
Experienced Professors	Situations that involve specific teaching goals (using a variety of activities) and the goal is met (e.g., get them interested, get them to synthesize, etc.)
Award Winning Professors	Situations in which they could be flexible and change their teaching based on their instincts and teach in a way they "know" will work from past experience (e.g., particular examples, methods, etc.)

Table 2: situations reflecting exemplary teaching

Discussion & Conclusion

Teaching is recognized as a complex process involving a multitude of factors, some of which have been addressed in this paper. The categories used in the coding process can be hypothetically separated, however, often when applying them, it is difficult to tease them apart. For example, in an account of teaching in which the professor described getting muddled in the content because s/he didn't plan, there are two issues (content knowledge and planning). Similarly, in accounts of teaching involving emotion, it is difficult to attribute the entire incident to the emotion of the professor, unless they describe that it was there emotion (e.g., enthusiasm) that dominated the incident, and not other aspects of teaching at that time. In addition, it is important to recognize that the way in which each of these categories may be attributed to the teaching of inexperienced, experienced, and award winning professors may be slightly different. For example, struggles with content differ across the caréer of a professor (e.g., dealing with fundamentals in a field vs. new ideas and research). Lastly, while it is tempting to attribute differences in teaching based on these categories, these data represent self-report of classroom incidents and include the professors opinion as to what they did that made a difference (for better or for worse). So, for example while award winners do not mention knowledge of pedagogy in their exemplary incidents of teaching, the exemplary incident may well involve a good deal of pedagogy that the professor takes for granted.

Looking over Table 3 it is clear that while there are trends in the reported critical incidents of poor and exemplary teaching, these categories of teaching occur in all groups. For example, even the most experienced or highly recognized professor may struggle with content. It is also interesting to note that while it was more frequent among award winners, flexibility and pedagogical content knowledge occurred in each of the groups. This trend confirms much of the

Coded Themes by Category and by Group

Category	Inexperienced Professors		Experienced Professors		Award Winning Professors	
	Poor	Exemp	Poor	Exemp	Poor	Exemp
Knowledge-Content	19	-	17	4	11	-
Knowledge- Learners	19	4	13	-	26	6
Knowledge- Pedagogy	14	35	30	19	17	17
Knowledge- Ped. Cont. Knowl	-	13	5	19	3	26
Knowledge-Role	-	-	5	-	-	3
Knowledge-Strategy	-	-	5	-	-	-
Process-Emotions	19	7	13	4	26	6
Process- Monitoring	29	30	5	18	11	14
Process-Flexibility	-	4	8	4	-	17
Goals	-	4	1	32	6	9
Actions	-	-	-	-	-	3

Table 3: Percentage of the summarized incidents of teaching by teaching category

research in cognitive psychology that has indicated that as people move from the status of novice to expert, changes in thinking occur (e.g., Ericsson & Smith, 1991; Lesgold, 1988) and supports the work of researchers like Leinhardt and Greeno (1991) that addresses planning, and classroom routines.

The data also have many implications for faculty development activities. Looking at the exemplary teaching incidents it is clear that these different groups of faculty would benefit from collective efforts to improve their teaching; each group has something too offer the other! The challenge for faculty developers is how to tap these resources. Looking at the data representing the poor incidents for each of the group may be an interesting place to start looking at possible faculty development activities for each of these groups. For example, inexperienced faculty could be benefit from learning how to make meaning of the cues they glean from students, experienced faculty may benefit from interventions dealing with pedagogy (e.g., how to plan, and still try to be flexible), and award winning faculty might benefit from interventions to give them information about their learners and to deal with the emotions of teaching (or teaching as an award winner).

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Appendix A
CIQ

EXEMPLARY Incident

The purpose of this section of the questionnaire is to get a sense of what occurred during this incident when you felt you did an exemplary job. If you can't think of an incident easily, please take a moment to think of the last time you felt challenged as a teacher. Or you may think of a time in recent years when, due in part to your actions or efforts, things went very well.

Once you have selected an incident, fill out the questions below. If you can't recall specifics, then please do your best to answer the question. If the question does not apply, then please indicate this in the space provided.

1. Approximately how long ago did this incident occur?

   This semester ___ Last semester _____ Last Year ___
   Other (specify): _____

2. What was the situation?
   a. How many students were in the class? _____

   b. Title of the course (approximate):

   c. Required course: _____ , Elective course: _____, Mixed: _____

   d. How many times had you previously taught the course? _____

   e. Type of students? Undergraduate: Graduate:

Freshmen	___	Masters	____
Junior	___	Ph.D.	____
Senior	___	Other:	
Mixed	___	_____	
Other:	_____		

3 How many times (e.g., classes) had you taught this particular group?

4. What was the topic of the class (general description)?

5. What were you trying to accomplish (i.e., teaching goal)?

6. What did you want the students to learn (i.e., learning goal)

7. What happened that made this incident memorable or critical?

8. What did you do (i.e., your actions and strategies)?

9. What were you thinking and feeling during this incident?

10. What do you feel was most demanding about the incident?

11. What is it that you know that contributed to making this an exemplary incident?

12. Did you learn anything from the experience?